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# Public Computer Center

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Learning Targets

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**Public Computer Center Learning Targets**

To keep up with demand Montana libraries are adding more public access computers for patron use. Public library staff members are often called upon to help patrons using the computers. Patrons often have many questions or concerns about using computers because they are not familiar with the latest technology.

To assist Montana Public Library staff members, MSL has compiled a list of target skills recognized as being helpful for managing computing centers and assisting patrons in using the computers. These skills are presented in categories of understanding. Not all targets will be necessary for all staff members. Some skills are more advanced and geared to Information Technology staff. Other learning targets are written for the staff member who will have the most contact with the patrons using the computers. For this reason, these targets are written in five separate sections or checklists: Library Board Members, Library Directors, Public Computer Center Staff, and Library, City, or County Network Administrators.

- ❑ *Library Board Members*  
These targets are designed for those who help make decisions regarding library policy.
- ❑ *Library Directors*  
These target skills are written to make sure the public access computers are well managed and maintained. Library directors are encouraged to review the learning targets listed under each section to identify the skills they and their staff need in order to run a public computing center. It might be helpful to have a discussion with staff, the board, and the library's network administrator about what skills staff members already have as well as what areas need more training.
- ❑ *Public Computer Center Staff – Basic Level*  
These targets are for the library staff member who works directly with patrons using the PCC. In larger libraries this could be PCC staff; in small libraries this could mean all staff including the director. The target skills on this list are written as a comprehensive list of potential issues patrons may need assistance with.
- ❑ *Public Computer Center Staff – Advanced Level*  
This list is for those staff members who have mastered the Basic Level PCC Learning Targets.
- ❑ *Library, City, or County Network Administrators*  
These targets are designed for those people who are directly working with the computer network setup, security, and management of the PCC.

The learning targets were created as a comprehensive checklist; therefore some of these skills will seem obvious and will require no additional training or learning. The learning targets have been developed to assist librarians and library staff in understanding the complexity of offering public computers and the depth of computer skills necessary in doing so. The Montana State Library will offer library development training based on these skills to help all librarians and library staff members feel comfortable and competent in managing and assisting patrons in the PCC.

**Categories****Computer Center and Mobile Device Management and Policies****Computer Hardware and Devices****Security Risks and Management****Computer Networking and Broadband****Basic Computer Operating and Software Skills****Internet Skills****Internet Safety****Training Patron Volunteers****Keeping up with Trends**

**Library Board Member Learning Targets****Computer Center and Mobile Device Management and Policies****Policy**

- ☐ Develop computer usage policies.
- ☐ Develop laptop usage and check-out policies.
- ☐ Develop mobile device/E-reader usage and check-out policies.
- ☐ Know the relevance to libraries of the Children's Internet Protection Act (CIPA). Know whether or not filtering software is used on public access machines in the library and how/when it may be turned off.
- ☐ Create any written library policies dealing with computer and network security, including a computer security policy, an Internet usage policy, a public access computer usage policy, and a CIPA and filtering policy

**Equipment**

- ☐ Develop a long-range plan of sustainability for the computer center.
- ☐ Develop a long-range plan of sustainability for mobile devices/E-readers.
- ☐ Develop a computer center budget to maintain PCC's and add new equipment as needed.
- ☐

**Mobile Devices**

- ☐ Demonstrate some understanding of mobile phones and other mobile devices and the applications they are capable of running.
- ☐ Demonstrate some understanding of the various e-readers and how to download materials to various e-readers.

**Security Risks and Management****Broadband**

- ☐ Understand the different types of broadband services available in your area.
- ☐ Know how to choose an appropriate broadband service.
- ☐ Understand-broadband service level agreements.

**Basic Computer Operating and Software Skills****Awareness of popular Internet sites used by patrons**

- ☐ Awareness of the Montana State Library resources including Ebsco/Discovery, HomeworkMT.org, Talking Books Library,

MTLib2Go, Montana Memory Project, and the Digital Archives.

- ☐ Awareness of the Montana Natural Resources Information System (NRIS) resources including the Digital Atlas, Topofinder, Cadastral Program, and the Hunting Companion.
- ☐ Awareness of the Montana Natural Heritage Program resources including, the Montana Field Guide, Montana Species of Concern, Natural Heritage Mapviewer and Tracker, and the Land Management Mapping.
- ☐ Be aware of other local and state Internet resources such as Job Services, DPHHS, AARP, legal assistance, and on-line learning.

**Internet Safety****Patron Internet Safety**

- ☐ Know patron privacy rights.

**Children's Internet Safety and Security**

- ☐ Awareness of your library's filtering system, especially to meet e-rate requirements.
- ☐ Know the latest information on keeping kids safe online.
- ☐ Be able to inform parents of children's privacy issues.

**Training Patron Volunteers**

- ☐ Be familiar with the library's objectives for training patron volunteers.

**Keeping up with Trends****How to stay informed**

- ☐ Be aware of the importance of lifelong learning for all levels of library work and advocate for management support of a personal learning plan.
- ☐ Locate information sources to stay informed of new technologies and programs becoming available or being used by patrons, including e-mail lists, journals, and blogs.
- ☐ Know what is meant by "Web 2.0" and "Library 2.0."
- ☐ Locate and read blogs and podcasts. Know what is meant by an RSS feed and how to subscribe.
- ☐ Know how to locate and use tutorials, webcasts and other online opportunities for learning.

- Devise a strategy for staying informed about advances in technology and tools that are likely to impact libraries.
- Locate and subscribe to e-mail lists, journals and blogs relevant to library technology.
- Determine the implication of new technologies on public access hardware, software, and security.

**Staff Development**

- Demonstrate support of staff development and training
- Develop/create a budget for training
- Encourage and implement staff ideas for using new technologies

## **Library Directors Learning Targets**

### **Computer Center and Mobile Device Management and Policies**

#### **Policy**

- ☐ Develop computer usage policies.
- ☐ Develop laptop usage and check-out policies.
- ☐ Develop mobile device/E-reader usage and check-out policies.
- ☐ Develop and maintain a PC reservation system and manage and prioritize computer traffic. This may or may not include software and hardware.
- ☐ Develop a system for patron printing needs.
- ☐ Keep track of usage statistics, including patron usage sessions, library Web site visits and other sources (such as the integrated library system).
- ☐ Be broadly familiar with the basics of copyright restrictions and violations and know how to determine whether or not a given Web page/site is copyrighted, as well as the specific copyright terms.
- ☐ Know the relevance to libraries of the Children's Internet Protection Act (CIPA). Know whether or not filtering software is used on public access machines in the library and how/when it may be turned off.
- ☐ Create any written library policies dealing with computer and network security, including a computer security policy, an Internet usage policy, a public access computer usage policy, and a CIPA and filtering policy.

#### **Equipment**

- ☐ Develop a long-range plan of sustainability for the computer center.
- ☐ Develop a long-range plan of sustainability for mobile devices/E-readers.
- ☐ Develop and implement a replacement cycle for outdated equipment.
- ☐ Develop a computer center budget to maintain PCC's and add new equipment as needed.

#### **Mobile Devices**

- ☐ Demonstrate some understanding of mobile phones and other mobile devices and the applications they are capable of running.

- ☐ Demonstrate some understanding of the various e-readers and how to download materials to various e-readers.

### **Security Risks and Management**

#### **Computer Security**

- ☐ Develop a plan to physically secure computer.
- ☐ Determine how the public access computing security system restricts patrons' actions. Know what actions are allowed but deleted later.

#### **Broadband**

- ☐ Understand the different types of broadband services available in your area.
- ☐ Know how to choose an appropriate broadband service.
- ☐ Understand-broadband service level agreements.
- ☐ Identify the ideal broadband speeds for your library.
- ☐ Identify the differences between common broadband products including cable, DSL, Ethernet, and wireless.

### **Basic Computer Operating and Software Skills**

#### **Software Usage**

- ☐ Perform basic computer skills. These skills may include, but would not be limited to keyboarding, using a mouse, understanding desktop icons, understanding the start menu, navigating windows, how to open programs and files, how to save information, and accessing the Internet.
- ☐ Be familiar with the various software applications that are available for patron use on the library's public computers and know the common uses of each.

#### **Awareness of popular Internet sites used by patrons**

- ☐ Awareness of the Montana State Library resources including Ebsco/Discovery, HomeworkMT.org, Talking Books Library, MTLib2Go, Montana Memory Project, and the Digital Archives.
- ☐ Awareness of the Montana Natural Resources Information System (NRIS) resources including the Digital Atlas,

Topofinder, Cadastral Program, and the Hunting Companion.

- ❑ Awareness of the Montana Natural Heritage Program resources including, the Montana Field Guide, Montana Species of Concern, Natural Heritage Mapviewer and Tracker, and the Land Management Mapping.
- ❑ Be aware of other local and state Internet resources such as Job Services, DPHHS, AARP, legal assistance, on-line learning.

### **Internet Safety**

#### **Patron Internet Safety**

- ❑ Know patron privacy rights.

#### **Children's Internet Safety and Security**

- ❑ Awareness of your library's filtering system, especially to meet e-rate requirements.
- ❑ Know the latest information on keeping kids safe online.
- ❑ Be able to inform parents of children's privacy issues.

### **Training Patron Volunteers**

#### **Training Patrons**

- ❑ Be familiar with the library's objectives for training patrons.

#### **Computer Volunteers**

- ❑ Recruit computer knowledgeable patrons to assist others in using computers.
- ❑ Understand the pros and cons of using volunteer peer computer trainers.
- ❑ Demonstrate an awareness of resources to recruit volunteers.

### **Keeping up with Trends**

#### **How to stay informed**

- ❑ Be aware of the importance of lifelong learning for all levels of library work and advocate for management support of a personal learning plan.
- ❑ Locate information sources to stay informed of new technologies and programs becoming available or being used by patrons, including e-mail lists, journals, and blogs.
- ❑ Know what is meant by "Web 2.0" and "Library 2.0."
- ❑ Learn about IM (instant messaging tools: Meebo, Trilliam, GAIM), social networking sites (MySpace, Facebook, SecondLife), social bookmarking (del.icio.us, furl), photo-sharing (Flickr, ShutterFly), music-sharing (Last.fm,

Pandora, iTunes), and video-sharing (YouTube).

- ❑ Locate and read blogs and podcasts. Know what is meant by an RSS feed and how to subscribe.
- ❑ Be familiar with online collaboration tools, like GoogleDocs, wikis or LibraryThing.
- ❑ Know how to locate and use tutorials, webcasts and other online opportunities for learning.
- ❑ Develop communication channels with system administrators to learn about changes and upgrades to the public access computers.
- ❑ Develop a plan to allow for testing and experimenting with new technologies becoming available or being used by patrons.
- ❑ Devise a strategy for staying informed about advances in technology and tools that are likely to impact libraries.
- ❑ Locate and subscribe to e-mail lists, journals and blogs relevant to library technology.
- ❑ Determine the implication of new technologies on public access hardware, software, and security.

### **Staff Development**

- ❑ Demonstrate support of staff development and training
- ❑ Develop/create a budget for training
- ❑ Encourage and implement staff ideas for using new technologies.

## **Public Computer Center Staff Learning Targets – Basic Level**

### **Computer Center and Mobile Device Management**

#### **Policy**

- Apply any written library policies dealing with computer, mobile device/E-reader, laptop usage and network security, including a computer security policy, an Internet usage policy, a public access computer usage policy, and a CIPA and filtering policy.
- Manage and prioritize computer traffic.
- Be broadly familiar with the basics of copyright restrictions and violations and know how to determine whether or not a given Web page/site is copyrighted, as well as the specific copyright terms.
- Know whether or not filtering software is used on public access machines in the library and how/when it may be turned off.

### **Computer Hardware and Devices**

#### **Set-up computer and peripherals**

- Demonstrate ability to set-up basic computer hardware including monitor, mouse, and keyboard.
- Understand and explain the importance of surge protectors and/or uninterruptible power supply (UPS).
- Demonstrate ability to start-up, reboot and power down computers and devices.

#### **Printers**

- Use Microsoft Windows printer configuration tools to pause or delete print jobs, and troubleshoot printing problems.
- Use basic printer controls: turn power on and off, switch status from offline to online, cancel current print job, etc...
- Know where to find toner and/or ink cartridges and how to load them into a printer.
- Know how to properly clear a paper jam.

### **Security Risks and Management**

#### **Computer Security**

- Recognize the symptoms and warning signs of several common types of computer security threats: banner ads, pop-ups, spyware, e-mail solicitations of personal information (phishing), significant slowdown in computer performance, files or folders that are deleted without user intervention, new installed programs not installed by a legitimate user, etc...
- Know what to do when installed antivirus software indicates a virus has been found on a public computer, whether in a file, an e-mail attachment, or an executable program.

### **Computer Networking and Broadband**

#### **Networking Computers**

- Know whom to contact to troubleshoot network connectivity issues (i.e., city or county IT department, or the library's Internet service provider [ISP]).

### **Basic Computer Operating and Software Skills**

#### **Software Usage**

- Perform basic computer skills. These skills may include, but would not be limited to keyboarding, using a mouse, understanding desktop icons, understanding the start menu, navigating windows, how to open programs and files, how to save information, and accessing the Internet.
- Identify some broad categories of different types of software applications (word processors, Web browsers, spreadsheets, databases, e-mail programs, etc.) and determine which are best suited to the patron's needs.
- Be familiar with the various software applications that are available for patron use on the library's public computers and know the common uses of each.
- Maximize, minimize, reposition and close program windows. Use horizontal and vertical scrollbars.
- Identify and use the menu bar and menus to access commonly used application functions.
- Be aware of the ability to have multiple applications open at once and toggle between open applications.
- Identify a toolbar within an application and understand the function of common icons on the toolbar.
- Cut, copy, and paste information within or between open programs.
- Know the difference between the "save" and "save as" functions within Windows programs.

### **Operating System and File Management**

- Launch a program from the Start menu or the desktop.
- Create shortcuts for a file, folder, or program on the desktop and organize the files saved to the desktop.
- Empty the Recycle Bin and be able to recover files and folders from the Recycle Bin.
- Perform basic file/folder functions, including how to open, close, delete and rename, as well as copy, cut and paste (or drag and drop) files and folders.
- Recognize common file name extensions and their associated applications or application types.
- Know the patron's options for saving files both temporarily and permanently and explain how to manage and utilize storage devices including internal and external hard drives, CD/DVD, USB, and on-line (cloud) file management.
- Be familiar with the restrictions of the public access computing security and know which files get deleted at the end of a patron session.
- Use the Windows Task Manager to end processes.
- Use the Help menu within an open application.

### **Common Patron Computer Uses and Applications**

- Know how to use Microsoft Word, Excel, PowerPoint or other similar applications
- Know how to conduct successful Internet research.

### **Internet Skills**

#### **Internet Use**

- Explain the basic structure of Web sites and pages.

- Know which Web browsers are available on the public computers and how to use them.
- Identify the different parts of a URL.
- Know how to copy and paste a URL from an electronic document into a Web browser's address bar or vice versa.
- Open a hypertext link in a new window or a new tab (Firefox/Mozilla/Internet Explorer 7).
- Be able to print only the desired information from a Web site.
- Know what pop-up and pop-under windows are, how to block them, and how to bypass pop-up blockers when necessary.
- Know what cookies are within the context of the Web.
- List some types of activities that are best performed only on secure sites and determine whether a particular Web page or site is secure.
- Use Back, Forward, Stop, Refresh and Home, as well as History (if available).
- Change the text size on a Web page.
- Download and save files from the Internet, including image, audio, and video.
- Assist a patron in saving "bookmarks" or "favorites."
- Know how to use online forms.
- Identify some of the most popular Web-based e-mail programs and help a patron sign up for and start using a Web-based e-mail account.
- Help patrons attach, send, and save file attachments in Web-based e-mail.
- List and use some popular search engines.
- Be familiar with a variety of strategies for searching the Internet, including keyword or phrase searching, the use of Boolean operators, and advanced search functionality.
- Be familiar with strategies to evaluate the accuracy, authority, currency, and credibility of Internet resources.

**Awareness of popular Internet sites used by patrons, especially local resources**

- Explain how to use the Montana State Library resources including Ebsco/Discovery, HomeworkMT.org, Talking Books Library, MTLib2Go, Montana Memory Project, and the Digital Archives.
- Explain how to use the Montana Natural Resources Information System (NRIS) resources including the

Digital Atlas, Topofinder, Cadastral Program, and the Hunting Companion.

- Explain how to use the Montana Natural Heritage Program resources including, the Montana Field Guide, Montana Species of Concern, Natural Heritage Mapviewer and Tracker, and the Land Management Mapping.
- Know how to use popular local and state Internet resources.

**Internet Safety**

**Patron Internet Safety**

- Know how to create a secure password.
- Be able to explain the difference between a user name and a password and how to create a secure password.

**Training Patron Volunteers**

**Training Patrons**

- Be familiar with the library's objectives for training patrons.
- Know the library's class schedule and know when to refer a patron to formal learning.
- Be able to direct a patron to further resources for learning.

**Keeping up with Trends**

**How to stay informed**

- Be aware of the importance of lifelong learning for all levels of library work and advocate for management support of a personal learning plan.
- Locate information sources to stay informed of new technologies and programs becoming available or being used by patrons, including e-mail lists, journals, and blogs.
- Know what is meant by "Web 2.0" and "Library 2.0."
- Learn about IM (instant messaging tools: Meebo, Trilliam, GAIM), social networking sites (MySpace, Facebook, SecondLife), social bookmarking (del.icio.us, furl), photo-sharing (Flickr, ShutterFly), music-sharing (Last.fm, Pandora, iTunes), and video-sharing (YouTube).
- Locate and read blogs and podcasts. Know what is meant by an RSS feed and how to subscribe.
- Know how to locate and use tutorials, webcasts and other online opportunities for learning.
- Devise a strategy for staying informed about advances in technology and tools that are likely to impact libraries.
- Locate and subscribe to e-mail lists, journals and blogs relevant to library technology.



**Public Computer Center Staff Learning Targets – Advanced Level****Computer Hardware and Devices****Set-up computer and peripherals**

- Demonstrate ability to trouble-shoot performance issues and apply appropriate fixes.

**Mobile Devices**

- Demonstrate the ability to use mobile phones and other mobile devices and the applications they are capable of running.
- Demonstrate the ability to use various e-readers and how to download materials to various e-readers.

**Printers**

- Distinguish whether a printing problem is a result of issues with the printer itself, specific computers, or with software applications that are trying to print to it.
- Understand basic printing and copyright laws.

**Security Risks and Management****Computer Security**

- Know the difference between regular and automated maintenance security of the computer.
- Know what is meant by various malware, such as viruses, spyware, adware, Trojans, worms and key loggers. Know the threats each poses.

**Computer Networking and Broadband****Networking Computers**

- Basic understanding of the key components of a Local Area Network (LAN).
- Basic understanding of the key components of a Wide Area network (WAN).
- Know the key differences between wired and wireless networks.

**Basic Computer Operating and Software Skills****Common Patron Computer Uses and Applications**

- Assist patrons with Microsoft Word or other word-processing applications, including how to compose a letter or a résumé and how to insert images.
- Assist patrons with Microsoft Excel and PowerPoint or similar applications.
- Know how to burn a music CD.
- Know how to manage and utilize storage devices including internal and external hard drives, CD/DVD, USB, and on-line (cloud) file management.
- Explain how to scan documents and how to use those digital documents.
- Explain how to upload, edit, and store photos.
- Explain how to make on-line phone calls, video calls, and explain how to send instant messages.

- Identify and explain a variety of social networking sites.
- Demonstrate knowledge of Open Source or Web 2.0 products and their uses.

**Internet Skills****Internet Use**

- Identify plug-in applications that are commonly used with Web browsers and update the most common browser plug-ins, such as Flash.
- Explain the differences between Web search engines, Web subject directories, and library subscription databases.

**Internet Safety****Patron Internet Safety**

- Explain patron privacy rights.
- Explain why use of an e-mail client (Outlook, Outlook Express, etc.) is a security risk on public computers and why Web-based e-mail is recommended in the PCC.
- Know how the public access security set-up retains records in the form of cookies, Internet history, or saved files between user sessions.
- Know how to remove saved records upon patron request and if it's even possible.

**Children's Internet Safety and Security**

- Know the latest information on keeping kids safe online and inform parents of children's privacy issues.

**Training Patrons and Patron Volunteers****Training Patrons**

- Identify the trainer's role and demonstrate the difference between coaching and training.
- Recognize the different age-appropriate audiences and the needs of each for training.

**Computer Volunteers**

- Recruit computer knowledgeable patrons to assist others in using computers.
- Understand the pros and cons of using volunteer peer computer trainers.

**Keeping up with Trends****How to stay informed**

- Be familiar with online collaboration tools, like GoogleDocs, wikis or LibraryThing.
- Develop communication channels with system administrators to learn about changes and upgrades to the public access computers.
- Develop a plan to allow for testing and experimenting with new technologies becoming available or being used by patrons.
- Determine the implication of new technologies on public access hardware, software, and security.

**Library, City, County Network Administrators Learning Targets****Computer Center and Mobile Device Management and Policies****Policy**

- Maintain PC Reservation system software, if available, that manages and prioritizes computer traffic.
- Apply any written library policies dealing with computer and network security, including a computer security policy, an Internet usage policy, a public access computer usage policy, and a CIPA and filtering policy.

**Equipment**

- Apply Computer Center Budget to maintain PCC's and add new equipment as needed.
- Be knowledgeable about the relationship between hardware components and the capacity for operating system and software upgrades.

**Computer Hardware and Devices****Set-up computer and peripherals**

- Demonstrate ability to set-up basic computer hardware including monitor, mouse, and keyboard.
- Know which port or socket to use for each component and how to verify that cables are properly connected.
- Understand and explain the importance of surge protectors and/or uninterruptible power supply (UPS).
- Demonstrate ability to connect computer peripherals including scanner, printer, keyboard, mouse, monitor, and speakers.
- Demonstrate ability to start-up, reboot and power down computers and devices.
- Demonstrate ability to trouble-shoot performance issues and apply appropriate fixes.
- Identify the network connection (wired or wireless) and determine if it is properly connected.

**Maintaining Computers**

- Research new computer equipment and systems and make recommendations for purchase.
- Be familiar with the various internal and external options for upgrading hardware (a wireless NIC could be PCI versus USB).
- Install new hardware including the proper/current drivers.

**Printers**

- Properly attach power, networking, USB, parallel and/or serial cables to a printer.
- Use Microsoft Windows printer configuration tools to add a printer, print a test page, perform "Printer Queue Management," pause or delete print jobs, and troubleshoot printing problems.

- Use basic printer controls: turn power on and off, switch status from offline to online, cancel current print job, etc...
- Be knowledgeable about the options for print management software and be able to implement such a system.
- Know where to order or request printer supplies (paper, toner cartridges).

**Security Risks and Management****Computer Security**

- Set up security in such a way to balance the security needs of the library with patron and staff usage of the computers.
- Understand the security set-up on the computer.
- Explain the difference between regular and automated maintenance security of the computer.
- Know what a firewall is and why it is important to secure computer networks with firewalls.
- Be able to suggest other hardware-based security solutions: proxy servers, routers, workstation "lockdown" mechanisms (i.e. Centurion Guard).
- Be familiar with password security and password record-keeping.
- Know what virus definition files are.
- Determine what protective software is installed on the public computers and whether the patches and updates are current.
- Be aware of the impact of the public access computing security on various malware, such as viruses, spyware, adware, Trojans, worms, etc...
- Know how the public access computing security impacts the ability to install or upgrade an operating system or other software.
- Identify some software-based security solutions: virus and spyware protection software, software firewalls, workstation lockdown programs (Fortres Grand).
- Know how to set up filters and Child Internet Protection settings, if applicable.
- Schedule a regular, automatic virus scan and know how to determine whether or not the public access system allows this or makes it unnecessary.
- Configure a public access computer to automatically check for and download operating system patches and updates over the Internet.

**Computer Networking and Broadband****Networking Computers**

- Explain the components of a Local Area Network (LAN).
- Explain the components of a Wide Area Network (WAN).
- Explain the relationship between LAN and WAN.

- Know what is meant by a LAN and how it can be connected to the Internet.
- Know what is meant by a network server, file server, application server, and print server.
- Produce or find a network diagram of the LAN and demonstrate a full understanding of how network devices connect together.
- Visually identify a network hub or switch, wireless access point, router and modem (dial-up, DSL, or cable).
- Visually identify a network cable (Cat 5, Ethernet, 10BASE-T, unshielded twisted pair, etc...).
- Set up a switch (or hub) and use it to connect several network devices (computers, printers, etc.) together, and use it to connect those computers to a larger network.
- Determine the connection status of a computer and test connections on the LAN or WAN.
- Use basic network troubleshooting tools such as ipconfig, ping, tracert and nslookup.
- Know the purpose of a NIC (network interface card) on a computer, identify it by looking at the back of a computer, and know what type of cable is required to connect it to a network wall jack, hub, or switch.
- Test connections to remote computers on the Internet.
- Recognize the difference between a local hard disk drive and a network drive.
- Isolate and identify problems with the network.
- Use Remote Access to troubleshoot network problems.
- Know whom to contact to further troubleshoot network connectivity issues (i.e., city or county IT department, or the library's Internet service provider [ISP]).
- Know what is meant by TCP/IP (Transmission Control Protocol/Internet Protocol).
- Know what is meant by IP addresses, Default Gateway, and DNS Server addresses.
- Know how a static IP address differs from an address assigned via DHCP (dynamic host configuration protocol).
- Know the difference between public (routable) and private (non-routable) IP addresses and the use of NAT (Network Address Translation).
- Identify the network address that has been assigned to a particular computer.
- Explain the different types of Internet connections (DSL, T-1, etc.) and speeds typically available to a public library.
- Identify the differences and the pros/cons of both a client/server network and a peer-to-peer network. Know which your library uses.
- Know the difference between a network client and a network server.

- Know the role of a Domain Controller in a Windows Active Directory network—a client/server network.
- Know the difference between logging on to the computer itself and logging on to a network domain, and know how to select between these choices.
- Know what a network user account is and how to connect to a network with such an account.
- Know how to change the password for your network user account.
- Know how a thin client computer differs from a PC.
- Know the key differences between wired and wireless networks.
- Identify the essential pieces of equipment needed to establish a wireless hotspot in the library.
- Identify special equipment that an individual computer needs to have in order to connect to a wireless network.
- Identify both physical and radio frequency factors in a library building that can interfere with the radio signals used with wireless networking.
- Mitigate the risks in configuring a “staff-only” wireless network.
- Mitigate the risks in offering wireless Internet access to the public.
- Identify the best security protocols and schemes that are used with wireless networks.

#### **Broadband**

- Understand the different types of broadband services available in your area.
- Know how to choose an appropriate broadband service.
- Understand-broadband service level agreements.
- Identify the ideal broadband speeds for your library.
- Identify the differences between common broadband products including cable, DSL, Ethernet, and wireless